PMC-AX3100
Edge Gateway

Overview

The PMC-AX3100 is a highly integrated intelligent terminal combining edge gateway, communication management, and local monitoring functions. Equipped with 5 x Ethernet port and 8 x RS-485 port (supporting multiple protocols), it is ideal for connecting RS-485-enabled devices to IP-based Ethernet LANs, and enables Ethernet-based access to these devices for SCADA and other automation applications. The device provides functions including data acquisition, protocol conversion, local storage, intelligent control, edge visualization, and remote operation & maintenance functions, which help users quickly establish a reliable data channel from terminal devices to cloud platforms, build a secure, stable, and efficient local monitoring system, and support cloud-edge-terminal collaborative operation. It is well-suited for applications in intelligent power distribution, smart manufacturing, microgrids, distributed photovoltaic power generation, and energy storage systems.

Typical Applications

- Energy Management and Power Quality Monitoring
- PV (Photovoltaic), Energy Storage and Environmental Monitoring
- Data Center and Power Distribution Monitoring
- Building, Factory & Process Automation
- Multi-scenario Data Visualization

Features

- Multi-core ARM processor with 1 to 4.8 TOPS computing
- 4GB RAM and 128GB eMMC for mass data storage, expandable to 256GB
- Rich Interfaces & Multi-Protocol Support
- Rich Edge Computing for various Applications
- Edge Visualization & Management
- Cloud-Edge Collaboration and easy O&M
- Dual power supply modules to minimize the risk of power supply failure, and built-in Super Capacitor ensures the system reliability with Loss-of-Power (LOP) alarm
- Compact and durable metal housing
- Built-in Web Server for access to real-time data and historical trends of measurements from connected IEDs as well as Gateway Setup, maintenance and other operations
- Transparent Gateway Mode allows the seamless transfer of serial packets between network-based Master applications and downstream serial devices via a direct TCP/IP connection
- NAT (Network Address Translation) enables internal Ethernet devices to access the external network via any Ethernet port
- Access Control and Firewall to protect incoming/outgoing Ethernet communications
- Options to enable/disable FTP/SSH/HTTP service
- Supported by CET's PMC-EasyCom for configuration and commissioning

Input and Output

- 8xDigital Input, Internal Excitation
- 2xForm A Digital Output and 2xForm C Digital Output
- 1xHDMI Port for connecting external HMI
- 2xUSB Port for connecting peripherals such as mouse, keyboard, etc.

Communications

- 8xRS-485 Port
- 5x10/100/1000 Base-T Ethernet Port
- Built-in mainstream protocols (Modbus, IEC 61850, IEC 104), with support for 200+ protocol expansions

Time Synchronization

- Battery-backed Real-time Clock @ 6ppm (≤0.5s/day)
- Time Sync. with SNTP, GPS 1PPS/IRIG-B Input, or through Communications

Data Concentration and Management

- Data collection via Ethernet and RS-485
  - Maximum 128 total downstream devices for all Ethernet port (maximum 64 devices per Ethernet port)
  - Maximum 64 downstream devices per RS-485 port
  - Modbus RTU/TCP, IEC 101/103/104, IEC 61850, DNP 3.0, BACnet/IP, S7 Protocol, Anypolling, and other extended collection protocols
  - Supports real-time meter polling, scheduled auto-collection, and on-demand collection via platform commands.
- Data push to external via Ethernet and RS-485
  - Multicast Transmission, up to 8 data cache channels
  - 4096xAI, 4096xDI, 2048xEnergy, 2048xSOE, 1024xAO, 1024xDO
  - Extensive protocols support: Modbus RTU/TCP, IEC 101/104, IEC 61850 (maximum 128 logic devices), OPC UA, BACnet/IP and etc.
  - DNS domain name resolution and Static Routing
  - Resumable Transfer for historical data
- Data storage
  - 128GB on-board non-volatile Log Memory, expandable to 256GB
  - Data Recording and Trend Curve of AI parameters per data cache channel
    - Max. Recording Depth @ 21,600
    - Configurable interval from 1 to 60min
    - 15 days @ 1min, 900 days @ 60min
  - Up to 81,920 (10,240x8) entries SOE Log
  - Disturbance Waveform Recorder (DWR)
    - Up to 10 channels @ maximum 10 directories each
    - Maximum 8 entries per subdirectory
  - Monitoring Logs including DI/DO changes, Alarms, Diagnostics and device operations
- Support virtual devices, as well as performing Logical Operations on virtual data
  - Maximum 128 virtual devices
  - 1024xAI, 1024xDI, 512xEnergy, 256xCustom SOE
- Setpoints for all parameters with configurable thresholds, time delays
- Simple configuration and commissioning via PMC-EasyCom

Technical Specifications

Communication	
Ethernet Port (ETH1~ETH5)	
Speed	10/100/1000 Mbps
Connector	RJ45
Isolation Protection	1.5kV barriers (Magnetic Isolator)
RS-485 (P1~P8)	
Baudrate	0.3/0.6/1.2/2.4/4.8/9.6/19.2/38.4 kbps
ESD Protection	8kV (Air) & 6kV (Contact)
Isolation Protection	3kV barriers (Opto-Isolator)
Power Supply (L/+, N/-)	
Standard	12-36VDC, Dual Power Supply
Burden	≤15W
Digital Inputs (DIC, DI1~DI8)	
Type	Dry contact, internally wetted
Sampling	1000Hz
Hysteresis	10ms minimum
Digital Outputs (DO11, DO12, DO21, DO22, DO31, DO32, DO41, DO42)	
DO1, DO2	Form A
DO3, DO4	Form C
Loading	5A @ 250VAC or 30VDC
GPS Input (CLK+, CLK-)	
Type	GPS 1PPS, IRIG-B
Accuracy	≤1ms
Environmental Conditions	
Operating Temp.	-25°C to +70°C
Storage Temp.	-40°C to +85°C
Humidity	5% to 95% non-condensing
Atmospheric pressure	70kPa to 106kPa
Mechanical Characteristics	
Unit Dimensions	286.2x153.2x48.0mm (PMC-AX3100-00) 264.3x194.8x76.0mm (PMC-AX3100-10)
Panel Cutout	271.2x105mm (PMC-AX3100-00) 258.3x188.8mm (PMC-AX3100-10)

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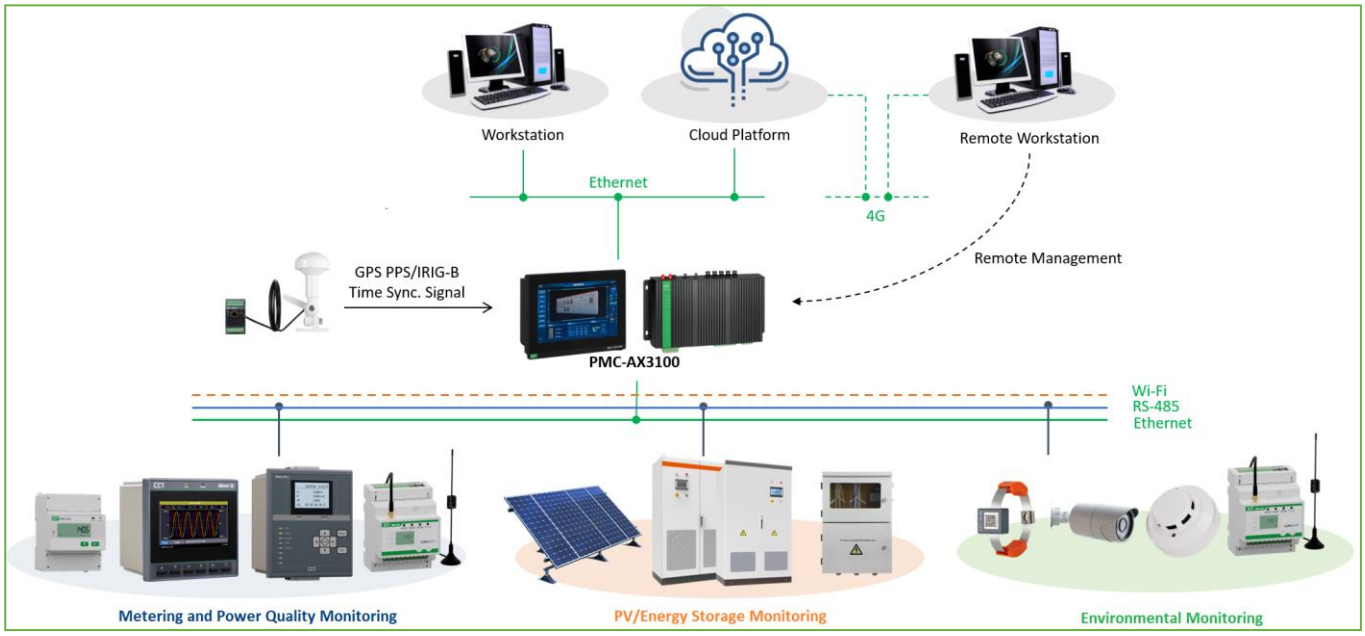
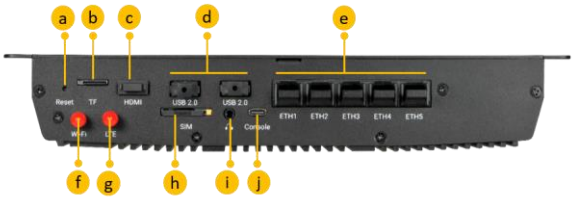
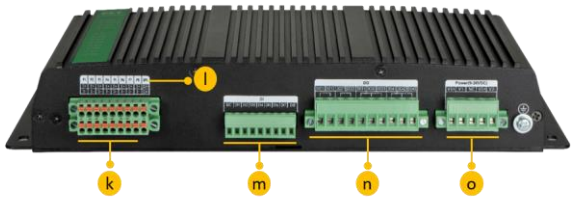
Typical Application Diagram



Terminal Diagram



Top View



Bottom View

Area	Label	Description
a	Reset	Reset Button
b	TF	TF Card Expansion Slot
c	HDMI	HDMI Port
d	USB 2.0	2xUSB Port
e	ETH1-ETH5	5x10/100/1000Base-T Port
f ~ j	Reserved	
k	P1-P8	8xRS-485 Port
l	CLK+, CLK-	GPS Input
m	DI	8xDigital Input
n	DO	4xDigital Output
o	Power (12-36VDC)	Dual Power Supply

Standard of Compliance

Safety Requirements	
CE LVD 2014/35/EU	EN 62368-1: 2014 + A11: 2017
Insulation AC Voltage: 0.5kV @ 1 minute Insulation Resistance: >100MΩ Impulse Voltage: 1kV, 1.2/50μs	EN 61010-1: 2010 + A1: 2019
EMC Compatibility CE EMC Directive 2014 / 30 / EU	
Immunity Tests	
Electrostatic Discharge	EN 61000-4-2: 2009
Radiated Fields	EN IEC 61000-4-3: 2020
Fast Transients	EN 61000-4-4: 2012
Surges	EN 61000-4-5: 2014 + A1: 2017
Conducted Disturbances	EN 61000-4-6: 2014 + AC: 2015
Magnetic Fields	EN 61000-4-8: 2010
Voltage Dips and Interruptions	EN IEC 61000-4-11: 2020
Ring Waves	EN 61000-4-12: 2017
Immunity of Multimedia Equipment Against Electromagnetic Disturbances	EN 55035: 2017 + A11: 2020
Emission Tests	
Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements	EN 55032: 2015 + A11: 2020
Limits for Harmonic Current Emissions for Equipment with Rated Current ≤16 A	EN IEC 61000-3-2: 2019 + A1: 2021
Limitation of Voltage Fluctuations and Flicker in Low Voltage Supply Systems for Equipment with Rated Current ≤16 A	EN 61000-3-3: 2013 + A1: 2019 + A2: 2021
Emission Standard for Industrial Environments	EN IEC 61000-6-4: 2019
Mechanical Tests	
Free Fall	IEC 60068-2-31: 2008
Vibration	IEC 60068-2-6: 2007
Shock	IEC 60068-2-27: 2008

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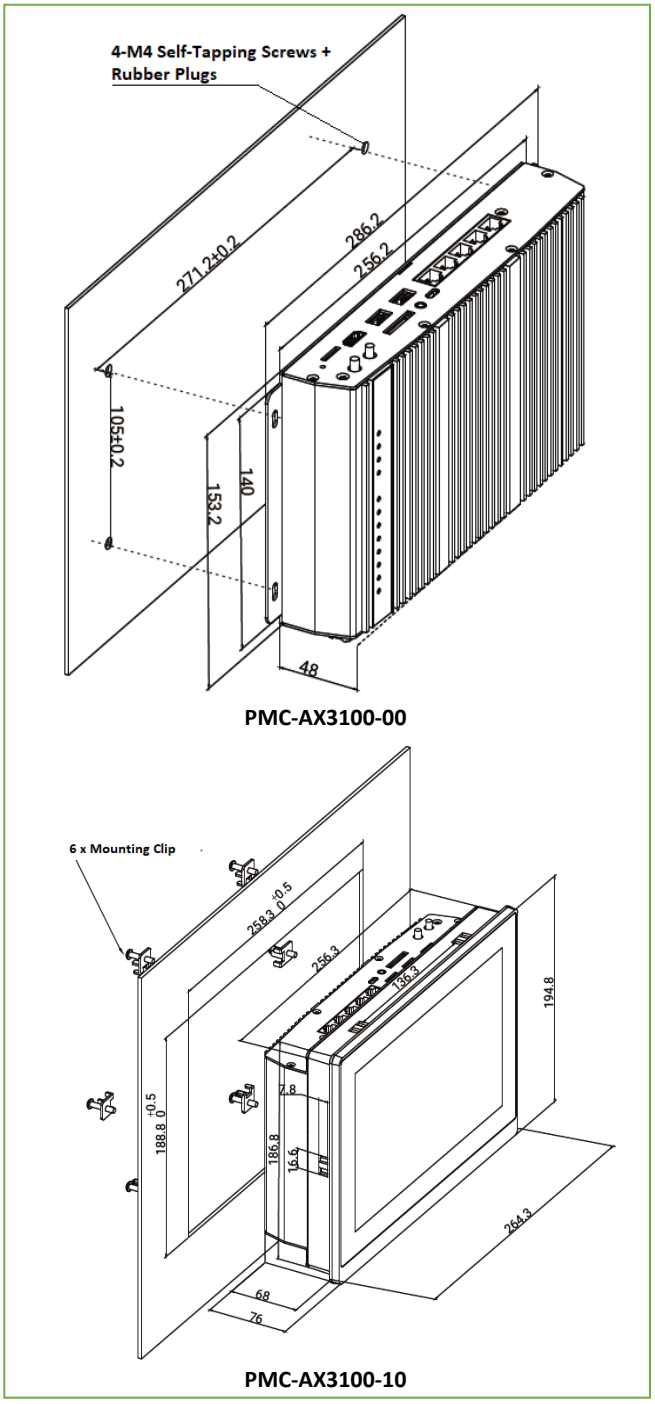
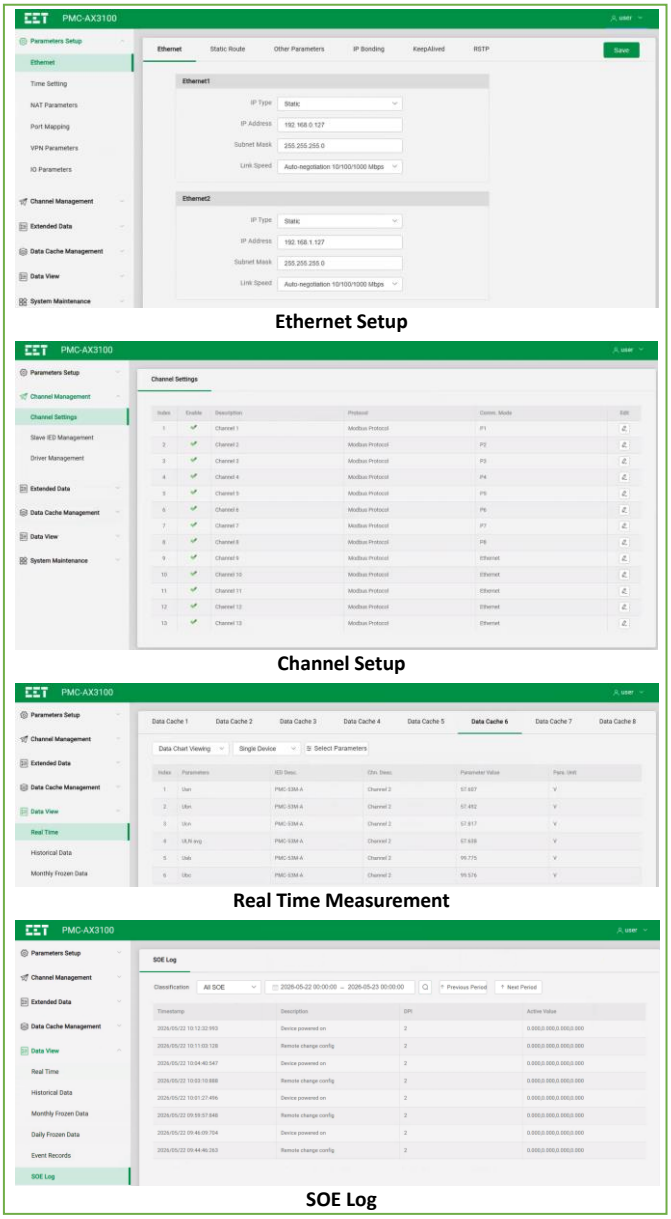
Dimensions and Installation (Unit: mm)



PMC-AX3100-00

PMC-AX3100-10

Web Interfaces



Ethernet Setup

Channel Setup

Real Time Measurement

SOE Log

CET Electric Technology Inc.
E: sales@cet-global.com
W: www.cet-global.com

Ordering Information

Version 20260906

Product Code	Description
PMC-AX3100 Edge Gateway	
Display	
00	None
10*	10.1-inch display with a resolution of 1280×800
Communication Ports	
T508	5x10/100/1000Base-T + 8xRS-485
Wireless	
NN	None
Power Supply	
B	12-36V DC, Dual Power Supply
Language	
E	English

PMC-AX3100 - 00 - T508 - NN - B E — PMC-AX3100-00-T508-NN-BE (Standard Model)

* Additional charges apply.

Your Local Representative

Revision Date: June 11, 2026

Designed For Reliability *Manufactured To Last*